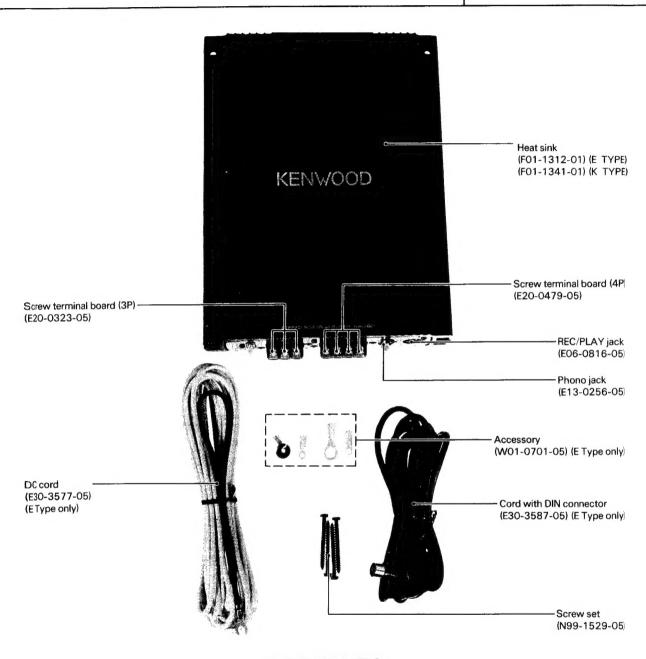
KAC-821 SERVICE MANUAL



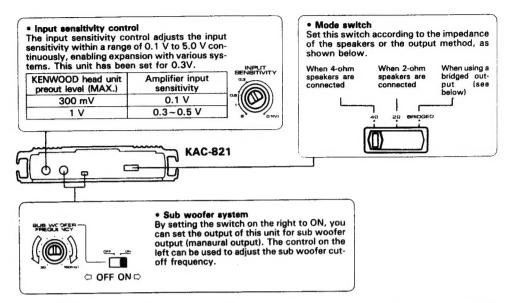
©1989-8 PRINTED IN JAPAN B51-6079-00(B)2984



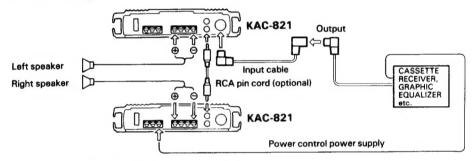
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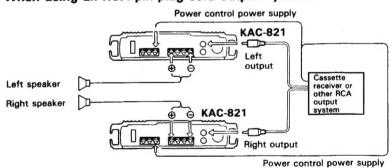
USE OF THE OPERATION PANEL ACCORDING TO SYSTEM TYPE



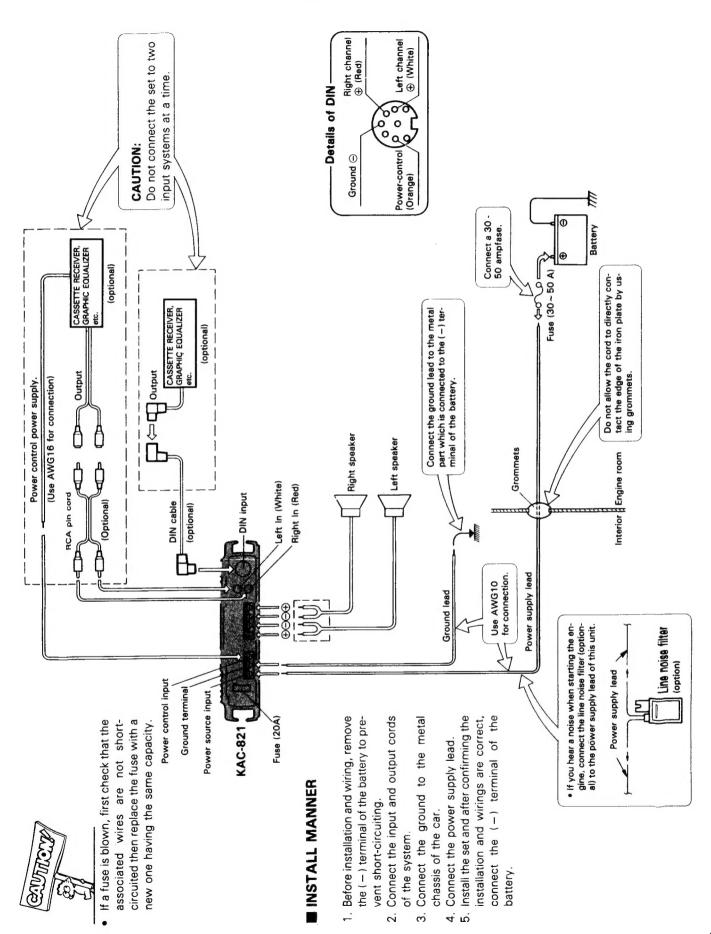
- \blacksquare This unit is provided with a bridged output function which enables you to double the unit's power output. (for 4 Ω speakers)
 - When using a KENWOOD DIN output system:



• When using an RCA pin-plug cord output system:



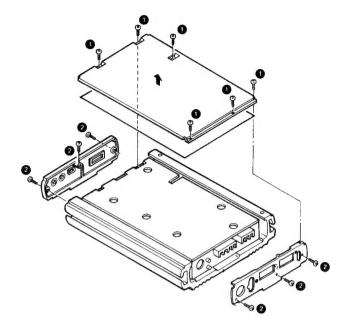
CONNECTIONS



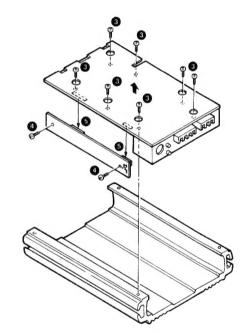
DISASSEMBLY FOR REPAIR

- 1. Remove the six screws

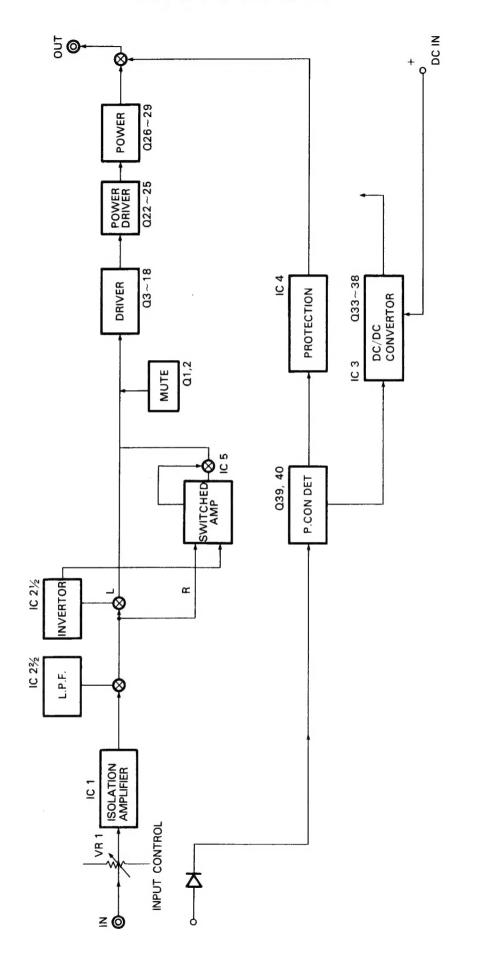
 of the bottom plate and detach it
- 2. Remove the six screws ② of the front and rear panels, and detach them.



- 3. Remove the seven screws 3 and disconnect the PC board.
- 4. Remove the two screws **1** or the PC board and disconnect it from the connector . . **1** .



BLOCK DIAGRAM





CIRCUIT DESCRIPTION

Description of Component

Components	Use/Function	Operation/Condition/Interchangeability
Q1,2	Input mute	Operated at a timing earlier than the relay at amplifier OFF to turn OFF the relay with no signal.
Q3~6	Input differential amplifier	To one input terminal, an input is applied, and to the other input terminal, a negative feedback is applied, thus determining the amplifier gain.
Q7~10	Second-stage differential amplifier	
Q11~14	Third-stage differential amplifier	
Q15,16	Current mirror	Load on Q13 and Q14 in the third-stage differentiation.
Q17,18	Measure against heat	Gain Pc to prevent rise in temperature.
Q19	AVR	+20 V AVR
Q20,21	Temperature compensation	
Q22~25	Power drive stage	
Q26~29	Power stage	
Q30~32	Current detection	Detect overcurrent to control protection IC.
Q33~38	Switching power stage	
Q39	Power switch	When Q40 turns ON, Q39 turns ON to supply power.
Q40	Switch driver	Detects P-CON and then turns ON.
Q41	AVR	20 V AVR
Q42	Mute drive	Receives the signal of IC4 pin 6 active "L", and then turns ON.
Q43	Switch drive	Channel selection of IC5
Q44,45	Switching driver	
IC1	Isolation amplifier	
IC2	Inversion circuit/subwoofer	BTL's inversion circuit/subwoofer LPF
IC3	Switching regulator controller	Provides a dead time to the switching wave.
IC4	Protection	Overload, DC offset and P-CON detection.
IC5	Switched operation amplifier	At the "BRIDGE" position, Q43 turns OFF to send the L-ch signal inversion to R-ch.

CIRCUIT DESCRIPTION

• About "BRIDGE" position

When the position switch (S2) on the panel is set to "BRIDGE", the BTL output is engaged, thus permitting twice the output level.

When S2 is with 4-ohms or 2-ohms, as regards signals, the L-ch signal goes to the driver as it is after passing an isolation amplifier (IC1), and the R-ch signal goes to the driver by way of a buffer of IC5.

When S2 is set to "BRIDGE", Q43 turns OFF, and IC5 is switched so that the inversion of the L-ch signal by IC2 (1/2) is supplied to R-ch on and after the driver stage. As to L-ch, the L-ch signal is supplied as it is.

Subwoofer cutoff frequency

The subwoofer cutoff frequency can be varied between 30 Hz and 150 Hz by use of VR2.

ADJUSTMENT/REGLAGE/ABGLEICH

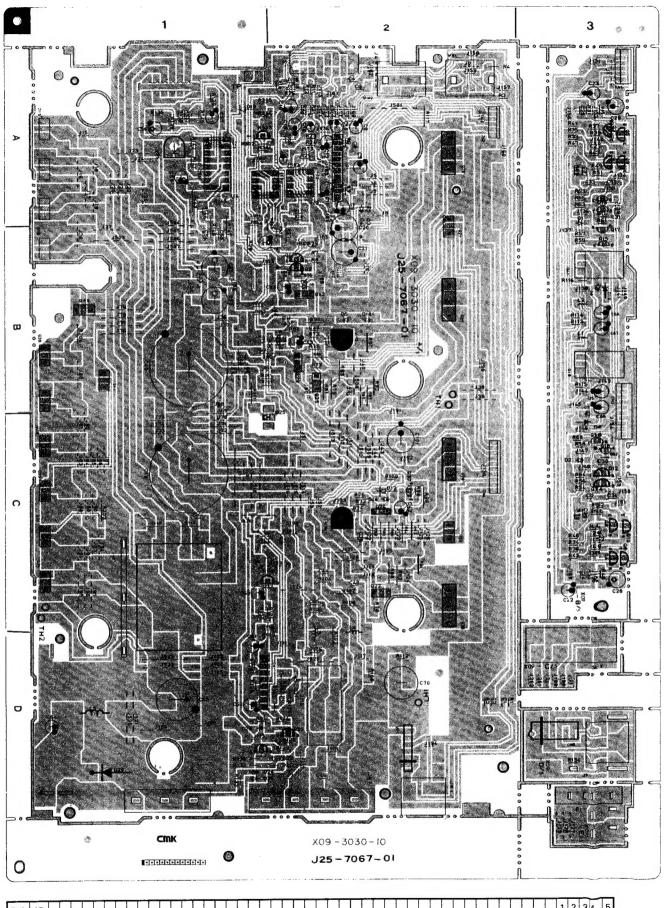
No.	ITEM	INPUT SETTINGS	OUTPUT Settings	AMPLIFIER SETTINGS	ALIGMENT POINTS	ALIGN FOR	FIG.
Connect a	IDLE CURRENT	_	Connect a DC voltmeter to: TP1 (L, R)	VOLUME: 0	VR3 (L) VR4 (R)	2 mV	(a)

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINTS L'ALIGNEMENT	ALIGNER POUR	FIG.
Raccord	ier une Platine à cassett	е.		,			_
1	COURANT DE POLARISATION	-	Raccorder un voltmètre CC à: TP1 (G, D)	VOLUME: 0	VR3 (G) VR4 (D)	2 mV	(a)

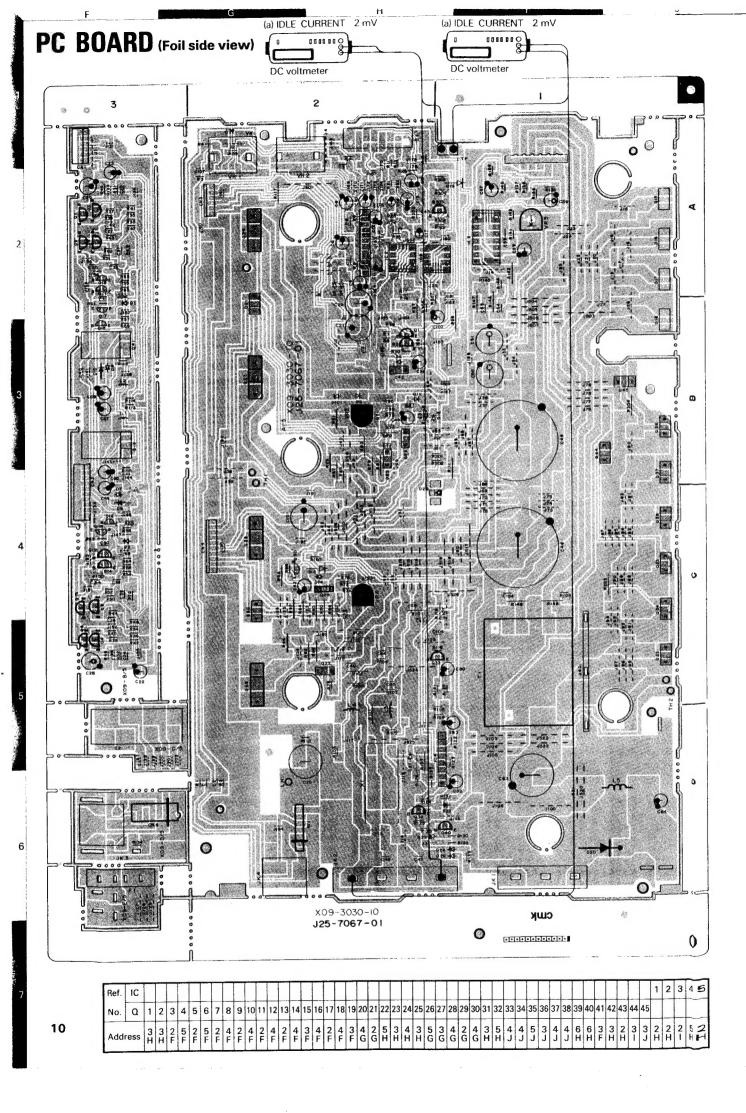
NR.	GEGENSTAND	EINGANGS- EINSTELLUNG	AUSGANGS- EINSTELLUNG	VERSTÄRKER Einstellung	ABGLEICH- PUNKTE	ABGLEICHEN FUR	ABB.
Ein Kas	settendeck anschließen.						
1	LEERLAUFSTROM	-	Einen Gleichstrom-Voltmeter anschließen an: TP1 (L, R)	VOLUME: 0	VR3 (L) VR4 (R)	2 mV	(a)

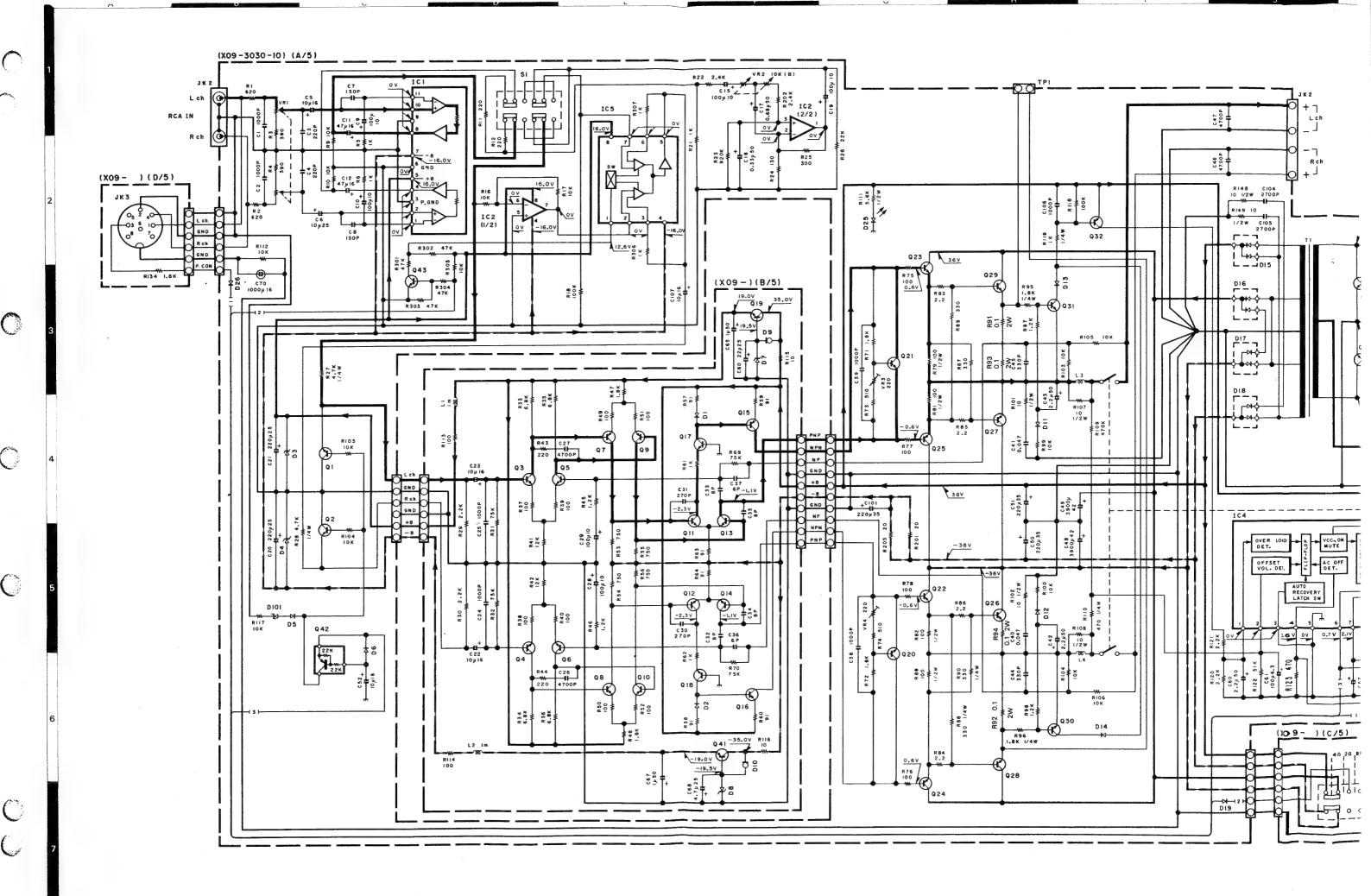
(a) → page 10

PC BOARD (Component side view)

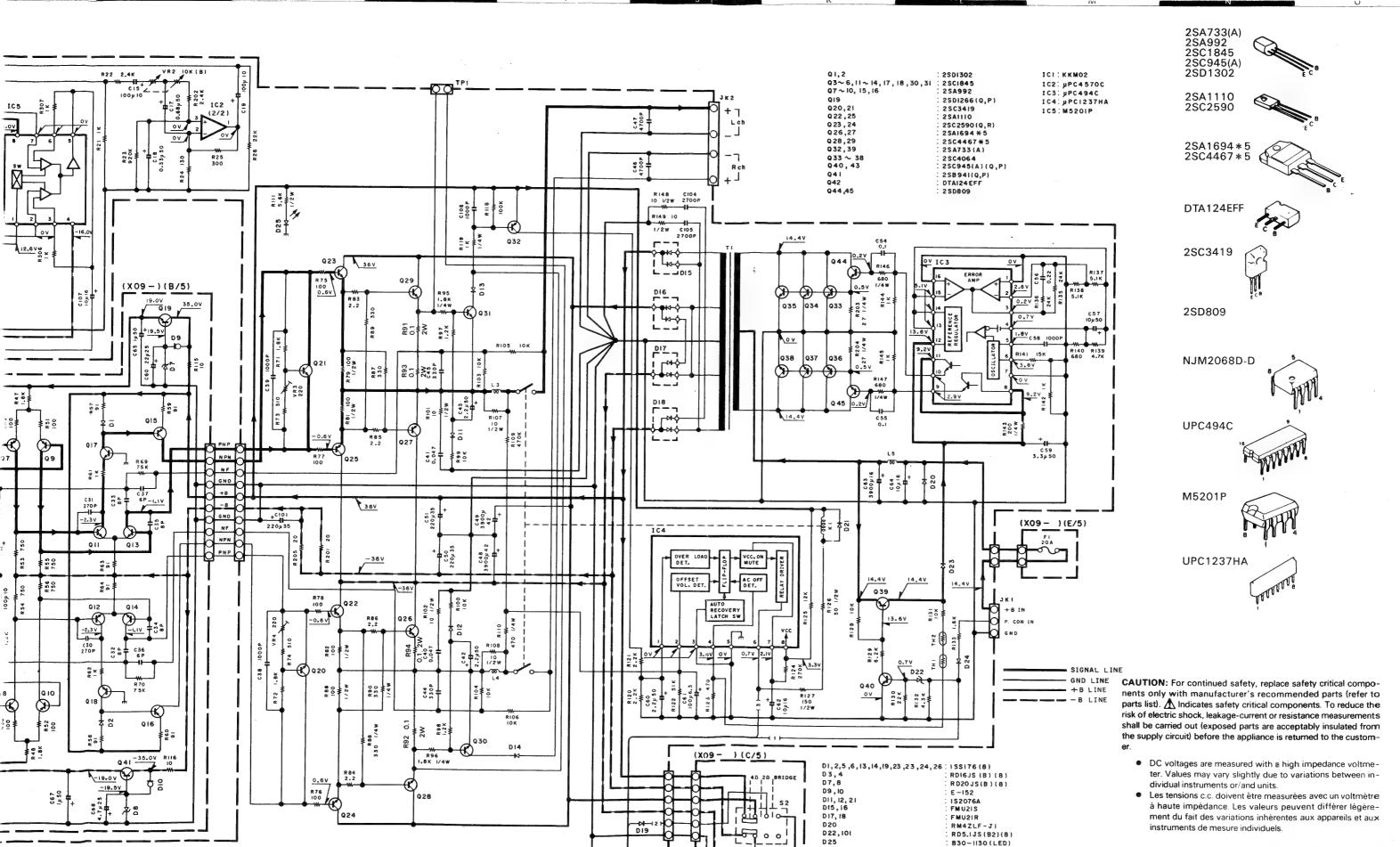


Ref.	IC	:	T													Γ		T																															1		2	3 4	-	5
No.	a		1	2	3	4	5	6	7	8	9	10	11	12	13	3 14	1	5 1	6	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	4:	3 4	1 4	5					
Addı	ress	S 1,	ci.	~ 1	2 E	5 E	2 E	5 E	2 E	4 E	2 E	4 E	2 E	4 E	2 E	4	E	3 4	1	2 E	4 E	3 E	4 D	2 D	5 C	3 C	4 C	3 C	5 D	3 D	4 D	2 D	4 D	3 C	5 C	4 A	5 A	5 A	3 A	4 A	4 A	6 C	6 C	3 E	3	2	3	S A	3	2	2	2 5 B		2 C





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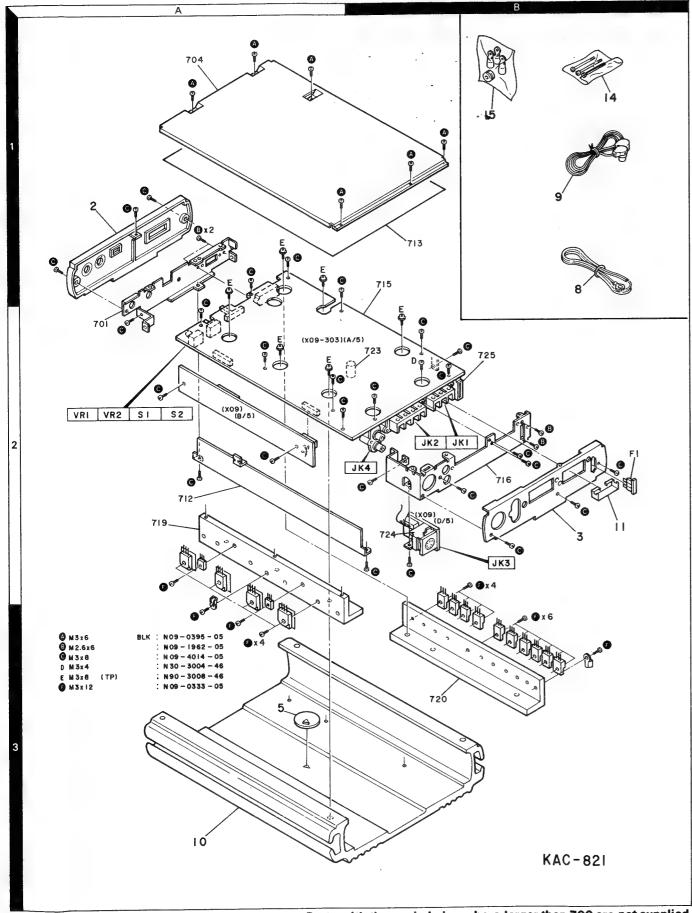
KΔC-821

Y08-3900-10

KAC-821(K)

KAC-821

EXPLODED VIEW



and the state of t

Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

★ New Parts

Parts without Parts No. are not supplied. Les articles non mentionnes dans le Parts No. ne sont pas fournis.

Telle ohne Parts No. werden nicht geliefert.

Ref. No.	Address	New Parts	Parts No.		Description	nation	Re- mark 備考
参照番号	位置	新	部 品 書 :	号	部 品 名 / 規 格 	仕 向	调气
				K	AC-821		
2 3	1 A 2B	*	A20-7529-02 A23-5004-03		PANEL REAR PANEL		
5 - - -	3A	*	B19-0818-04 B44-2163-04 B44-2164-04 B46-0100-10 B50-7910-00		LIGHTING BOARD UPC CODE LABEL UPC CODE LABEL WARRANTY CARD INSTRUCTION MANUAL	К	
-		*	B50-7912-00 B50-7913-00 B58-0803-13		INSTRUCTION MANUAL INSTRUCTION MANUAL CAUTION CARD (210X148,DBP)	E & E	
8 9 10 10 11 F1	1B 1B 3A,3B 3A,3B 2B 2B	* * * * *	E30-3577-05 E30-3587-05 F01-1341-01 F01-1312-01 F07-1008-04 F05-2038-05		DC CORD CORD WITH DIN CONNECTOR HEAT SINK HEAT SINK COVER FUSE (20A)	田田大田田	
- - - -		* * * *	H01-9062-04 H01-9068-04 H03-3074-04 H03-3081-04 H10-4314-02		ITEM CARTON CASE ITEM CARTON CASE OUTER CARTON CASE OUTER CARTON CASE POLYSTYRENE FOAMED FIXTURE	K E K E K	
- - -		*	H10-4315-02 H25-0321-04 H25-0336-04		POLYSTYRENE FOAMED FIXTURE PROTECTION BAG (600X315X0.03 PROTECTION BAG (170X250X0.03		
14 A B C D	1B 1A,1B 2B 1A,2B 2B	*	N99-1529-05 N09-0395-05 N09-1962-05 N09-4014-05 N30-3004-46		SCREW SET TAPTITE SCREW (M3X6) TAPTITE SCREW (M2.6X6) TAPTITE SCREW (3X8) PAN HEAD MACHINE SCREW		
Е	2A,2B		N90-3008-46		TP HEAD MACHINE SCREW		
15	1B	*	W01-0701-05		ACCESSORY	E	
				r (xc	9-3030-10: K, 0-11: E)		
D25 C1 ,2 C3 ,4 C5 C6 C7 ,8		*	B30-1321-05 CK45FB1H102H CC45FSL1H221 CE04DW1C100M CE04DW1E100M CC45SL1H1513	IJ M M	CERAMIC 1,000PF K CERAMIC 220PF J ELECTRO 10UF 16WV ELECTRO 10UF 25WV CERAMIC 150PF J		
C9 ,10 C11 ,12 C15 C17 C18			C90-1640-05 CE04DW1C330N CE04DW1A101N CE04CW1HR68N CE04CW1HR33N	M M	ELECTRO 100UF 10WV ELECTRO 33UF 16WV ELECTRO 100UF 10WV ELECTRO 0.68UF 50WV ELECTRO 0.33UF 50WV		
C19 C20 ,21 C22 ,23 C24 ,25 C26 ,27			CE04DW1A101N CE04DW1E221N CE04DW1C100N CF92FV1H1023 CF92FV1H4723	M M J	ELECTRO 100UF 10WV ELECTRO 220UF 25WV ELECTRO 10UF 16WV MF 1000PF J MF 4700PF J		
C28 ,29 C30 ,31			C90-1640-05 CC45FSL1H271	1 J	ELECTRO 100UF 10WV CERAMIC 270PF J		

E: Scandinavia & Europe K: USA U: PX(Far East, Hawaii) T: England M: Other Areas

UE : AAFES(Europe) X: Australia

× New Parts

PARTS LIST

Parts without Parts No. are not supplied.

Les articles non mentionnes dans le Parts No. ne sont pas fournis.

Telle ohne Parts No. werden nicht gellefert.

Ref. No.	Address	4	Parts No.	Description	Desti-	Re-
参照番号	位置	Parts 事	部品番号	部品名/規格		marks 備考
	1			KAC-821		1
2 · 3	1 A 2B	*	A20-7529-02 A23-5004-03	PANEL REAR PANEL		
5 - - -	3A	*	B19-0818-04 B44-2163-04 B44-2164-04 B46-0100-10 B50-7910-00	LIGHTING BOARD UPC CODE LABEL UPC CODE LABEL WARRANTY CARD INSTRUCTION MANUAL	К	
- -		*	B50-7912-00 B50-7913-00 B58-0803-13	INSTRUCTION MANUAL INSTRUCTION MANUAL CAUTION CARD (210X148,DBP)	E E E	
8 9 10 10 11 F1	1B 1B 3A,3B 3A,3B 2B 2B	* * * * *	E30-3577-05 E30-3587-05 F01-1341-01 F01-1312-01 F07-1008-04 F05-2038-05	DC CORD CORD WITH DIN CONNECTOR HEAT SINK HEAT SINK COVER FUSE (20A)	E E XE E	
- - - -		* * * * *	H01-9062-04 H01-9068-04 H03-3074-04 H03-3081-04 H10-4314-02	ITEM CARTON CASE ITEM CARTON CASE OUTER CARTON CASE OUTER CARTON CASE POLYSTYRENE FOAMED FIXTURE	K E K E K	
- - -		*	H10-4315-02 H25-0321-04 H25-0336-04	POLYSTYRENE FOAMED FIXTURE PROTECTION BAG (600X315X0.03) PROTECTION BAG (170X250X0.03)	E	
14 A B C	1B 1A,1B 2B 1A,2B 2B	*	N99-1529-05 N09-0395-05 N09-1962-05 N09-4014-05 N30-3004-46	SCREW SET TAPTITE SCREW (M3X6) TAPTITE SCREW (M2.6X6) TAPTITE SCREW (3X8) PAN HEAD MACHINE SCREW		
3	2A,2B		N90-3008-46	TP HEAD MACHINE SCREW		
15	1B	*	W01-0701-05	ACCESSORY	Е	
		. 1		09-3030-10: K, 0-11: E)		
025 01 ,2 03 ,4 05 06 07 ,8		*	B30-1321-05 CK45FB1H102K CC45FSL1H221J CE04DW1C100M CE04DW1E100M CC45SL1H151J	CERAMIC 1.000PF K CERAMIC 220PF J ELECTRO 10UF 16WV ELECTRO 10UF 25WV CERAMIC 150PF J		
9 ,10 211 ,12 215 217 218			C90-1640-05 CE04DW1C330M CE04DW1A101M CE04CW1HR68M CE04CW1HR33M	ELECTRO 100UF 10WV ELECTRO 33UF 16WV ELECTRO 100UF 10WV ELECTRO 0.68UF 50WV ELECTRO 0.33UF 50WV		
019 020 ,21 022 ,23 024 ,25 026 ,27			CE04DW1A101M CE04DW1E221M CE04DW1C100M CF92FV1H102J CF92FV1H472J	ELECTRO 100UF 10WV ELECTRO 220UF 25WV ELECTRO 10UF 16WV MF 1000PF J MF 4700PF J		
28 ,29 30 ,31	i		C90-1640-05 CC45FSL1H271J	ELECTRO 100UF 10WV CERAMIC 270PF J		

E: Scandinavia & Europe K: USA

P: Canada

U: PX(Far East, Hawaii) T: England

M: Other Areas

UE : AAFES(Europe) X: Australia

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⚠ indicates safety critical components.

× New Parts

PARTS LIST

Parts without Parts No. are not supplied.

Les articles non mentionnes dans le Parts No. ne sont pas fournis.

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Ref. No.	Address	New Parts		Desc	ription			Re
参照番号	位置		部品番号	部品名	名/規	格		mar 備
C32 -35 C36 ,37 C38 ,39 C40 ,41 C42 ,43			CC45FSL1H080D CC45FSL1H060D CF92FV1H102J CF92V1H473J CE04DW1H2R2M	CERAMIC 6 MF 10 MF 0	.0PF .0PF 000PF .047UF .2UF	D D J J 50WV		
C44 ,45 C46 ,47 C48 ,49 C50 ,51 C52		*	CC45FSL1H331J CF92FV1H472J C90-2517-05 CE04DW1V221M CE04DW1C100M	MF 4' ELECTRO 3' ELECTRO 22	30PF 700PF 900UF 20UF 0UF	J J 42WV 35WV 16WV		
C54 ,55 C56 C57 C58 C59			CF92FV1H104J CE04DW1HR22M CE04DW1C100M CF92FV1H102J CE04DW1H3R3M	ELECTRO 0. ELECTRO 10 MF 10	.10UF .22UF OUF 000PF .3UF	J 50WV 16WV J 50WV		
C60 C61 C62 C63 C64			CE04DW1H2R2M CE04DW0J101M CE04DW1C100M C90-1634-05 CE04DW1C100M	ELECTRO 10 ELECTRO 39	.2UF 00UF 0UF 900UF 0UF	50WV 6.3WV 16WV 16WV 16WV		
C65 C66 C67 C68 C69			CE04DW1H010M CE04DW1E220M CE04DW1H010M CE04DW1E4R7M CF92FV1H104J	ELECTRO 22 ELECTRO 1. ELECTRO 4.	.0UF 2UF .0UF .7UF .10UF	50WV 25WV 50WV 25WV J	К	
C70 C101 C104,105 C106 C107			C90-1630-05 CE04DW1V221M CF92FV1H272J CF92FV1H102J CE04DW1C100M	ELECTRO 22 MF 27 MF 10	000UF 20UF 700PF 000PF OUF	16WV 35WV J J 16WV		
JK1 JK2 JK3 JK4	2B 2B 2B 2B	* *	E20-0323-05 E20-0479-05 E06-0816-05 E13-0256-05	SCREW TERMINAL SCREW TERMINAL REC/PLAY JACK PHONO JACK				
L1 ,2 L3 ,4 L5 T1		* * *	L33-0344-15 L39-0085-05 L33-0903-05 L19-0502-05	CHOKE COIL PHASE-COMPENSAT LINE FILTER COI TRANSFORMER FOR	[L	İ		
C F	2A,2B 2A,3B	*	N09-4014-05 N09-0333-05	TAPTITE SCREW TAPPING SCREW	(3X8) (3X12)			
R79 -82 R91 -94 R101,102 R107,108 R111			RD14DB2H101J R92-0205-05 RD14DB2H100J RD14DB2H100J RD14DB2H562J	SMALL-RD 10 METAL-PLATE 0. SMALL-RD 10 SMALL-RD 10 SMALL-RD 5.	1	J 1/2W K 2W J 1/2W J 1/2W J 1/2W		
R126,127 R148,149 VR1 VR2 VR3,4		*	RD14DB2H151J RD14DB2H100J R10-3030-05 R10-3632-05 R12-0092-05	SMALL-RD 15 SMALL-RD 10 POTENTIOMETER POTENTIOMETER(1 TRIMMING POT.(2	OK)	J 1/2W J 1/2W		
K1 S1 S2		*	S51-2078-05 S31-4641-05 S31-2622-05	MAGNETIC RELAY SLIDE SWITCH SLIDE SWITCH				

E: Scandinavia & Europe K: USA

P: Canada

U: PX(Far East, Hawaii) T: England

M: Other Areas

UE : AAFES(Europe) X: Australia

⚠ indicates safety critical components.

16

PARTS LIST

× New Parts

Parts without Parts No. are not supplied.

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Ref. No.	Address New	Parts No.	Description	Desti- Re
参照番号	位置 新	部品番号	部品名/規格	仕 向備:
D1 ,2 D3 ,4 D5 ,6 D7 ,8 D9 ,10		1SS176 RD16JS(B) 1SS176 RD20JS(B) E-152	DIODE ZENER DIODE DIODE ZENER DIODE CONSTANT CURRENT DIODE	
D11 D12 D13 ,14 D15 ,16 D17 ,18		1SS176 1S2076A 1SS176 FMU21S FMU21R	DIODE DIODE DIODE DIODE	
D19 D20 D21 D22 D23 ,24		1S2076A RM4ZLF-J1 1SS176 RD5.1JS(B2) 1SS176	DIODE DIODE DIODE ZENER DIODE DIODE	
D26 D101 IC1 IC2 IC3	*	1SS176 RD5.1JS(B2) KKNO2 NJM2068D-D UPC494C	DIODE ZENER DIODE IC IC(OP AMP X2) IC(SWITCHING REGULATOR)	
IC4 IC5 Q1 ,2 Q3 -6 Q7 -10		UPC1237HA M5201P 2SD1302(S) 2SC1845(F,E) 2SA992(F,E)	IC(POWER AMP) IC(OP AMP X2) TRANSISTOR TRANSISTOR TRANSISTOR	
911 912 913 914 915		2SC1845(F,E) 2SC1845(F,E) 2SC1845(F,E) 2SC1845(F,E) 2SA992(F,E)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	
916 917 ,18 919 920 ,21 922	*	2SA992(F,E) 2SC1845(F,E) 2SD1266BD(Q,P) 2SC3419 2SA1110(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	
923 ,24 925 926 ,27 928 ,29 930 ,31		2SC2590(Q,R) 2SA1110(Q,R) 2SA1694*5 2SC4467*5 2SC1845(F,E)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	
Q32 Q33 -38 Q39 Q40 Q41	*	2SA733(A)(Q,P) 2SC4064(Q,Y) 2SA733(A)(Q,P) 2SC945(A)(Q,P) 2SB941BD(Q,P)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	
Q42 Q43 Q44 ,45 TH1 ,2	*	DTA124EFF 2SC945(A)(Q,P) 2SD809(K,F) PTH487A01BC222T	DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR POSITIVE RESISTOR	

E: Scandinavia & Europe K: USA

P: Canada

U: PX(Far East, Hawaii) T: England

M: Other Areas

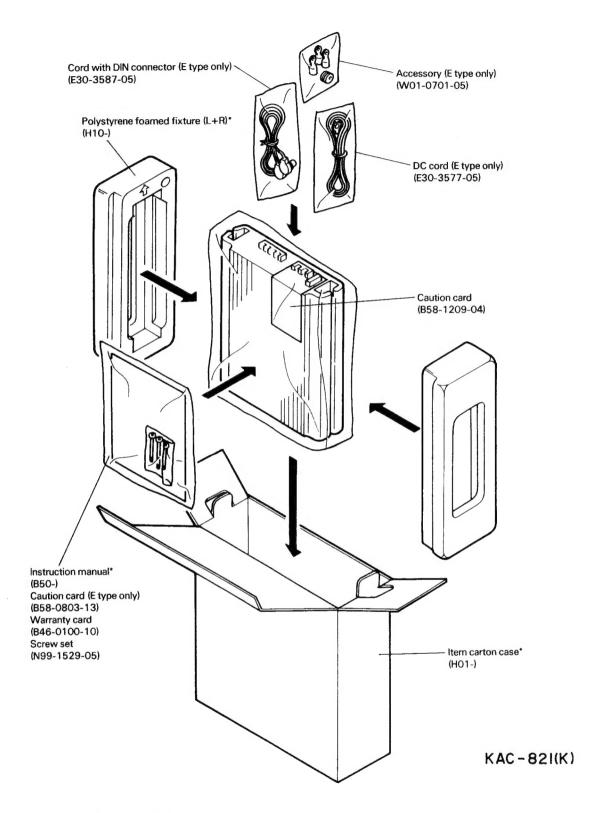
UE : AAFES(Europe)

X: Australia

MEMORANDUM

18

PACKING



^{*} Refer to parts list on page 15.



SPECIFICATIONS

Specifications subject to change without notice.

Audio section

Max Power Output (1 kHz, 4 Ω)	
Normal	140 W + 140 W
Bridged	280 W
Power Output	
Normal (20 Hz~20 kHz, 4 Ω, less than 0.5% THD)	75 W + 75 W
Bridged (1 kHz, 4 Ω, 0.5% THD)	150 W
Output Power	
Normal (1 kHz, 2 Ω, 0.5% THD)	75 W + 75 W
Frequency Response (-3 dB)	
Sensitivity (rated output) MAX.	
	5.0 V
Signal to Noise Ratio	105 dB
Input Impedance	10 kΩ
Damping Factor (100 Hz)	More than 200
Sub Woofer Frequency	
General	
Operating Voltage	14.4 V (11~16 V allowable)
Current Consumption (MAX.)	
Dimensions (W×H×D)	
— · · · · · · · · · · · · · · · · · · ·	$(9-1/16 \times 1-15/16 \times 11-13/16 \text{ in.})$
Weight	
· · · · · · ·	

For this reason specifications may be changed without notice.

Kenwood poursuit une politique de progrès constants en ce qui concerne le développement Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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